



Meat Messenger

North Dakota State Meat and Poultry Inspection Program

2013 Quarter 4

Processing venison

By Andrea L. Grondahl, DVM

State Meat and Poultry Inspection Director

Previous studies in North Dakota and other Midwestern states found lead fragments in venison from deer shot with lead ammunition. It is highly likely that any deer shot with lead ammunition will contain lead particles. Although no evidence linking venison consumption to lead poisoning in humans is available, the amount of lead found in some samples suggests people who eat venison shot with lead ammunition could incur lead poisoning.

Lead is a neurotoxin, affecting the brain and central nervous system. The risk depends on the amount consumed and frequency of exposure; limiting the amount of lead exposure reduces the risk of harm. Lead can have harmful effects on human bodies and brains at levels below that which would cause noticeable signs of illness. Pregnant women and children 6 and younger are especially vulnerable to lead exposure.

Preliminary research indicates that lead bullets or shot may disintegrate upon impact, spreading small lead particles far from the bullet's path. It is possible that lead particles are spread through the meat during processing and grinding. The following recommendations should be followed to limit the amount of lead in ground deer or deer sausage.

1. Try to determine the path of the bullet and if it contacted any bone. A recent peer-reviewed study in Europe of 10 red deer and 10 wild boars taken by hunters indicated that when the bullet contacted the vertebrae, a greater degree of lead contamination resulted. The study also found elevated lead levels in meat 10 to 15 centimeters (about 4-6 inches) from the bullet path. About half the animals still had a detectable lead level 15 to 25 centimeters (6-10 inches) from the wound channel.



2. Trim a generous amount away from the bullet wound channel and discard any meat that is bruised, discolored or contains hair, dirt, bone fragments or grass. Studies have found lead in venison even though most processors usually trim away visibly damaged tissue. Consider trimming beyond what has been common practice. It may be necessary to discard complete legs, shoulders, or backstrap if there is evidence of an extensive wound and/or contact with bone. Most lead particles in venison are too small to be seen or felt. It may not be possible to determine if there is lead contamination in a piece of venison by looking at it.

3. Use care when selecting venison for grinding. A Minnesota study determined that ground product had a much higher rate of metal contamination (26 percent) than did non-ground product (2 percent). This might suggest that because of its appearance, meat nearer to the wound channel is more likely to be used for trim and ground products. When in doubt, discard venison or cut it into chops to limit the amount of lead entering the grinder.

4. Periodically check grinders for lead fragments. The grinding process creates additional risks no matter what

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Regulation reminder

7-13-04-03. Farm slaughter and game animals.

Animals slaughtered on the farm, or game animals, may be processed at facilities under the same provisions as custom slaughtering or processing, provided that such animal carcasses are clean and wholesome and are handled, stored, and prepared so as to prevent the contamination of other food products handled, stored, or prepared at the plant. A person may not offer for sale or barter any meat, meat byproduct, or any meat food product slaughtered or processed in this method.

History: Effective August 1, 2000.

General Authority: NDCC 36-24-11, 36-24-12, 36-24-24

Law Implemented: NDCC 36-24-10, 36-24-11

7-13-04-04. Sanitary requirements.

A person or facility may not conduct custom slaughtering, custom processing, or custom-exempt operations unless such operations are conducted in accordance with the sanitary requirements under title 9, Code of Federal Regulations, parts 303 and 381.

History: Effective August 1, 2000; amended effective January 1, 2004.

General Authority: NDCC 36-24-24

Law Implemented: NDCC 36-24-11

?? Did you know...??

In September 1813, the United States got its nickname, Uncle Sam. The name is linked to Samuel Wilson, a meat packer from Troy, NY, who supplied barrels of beef to the United States Army during the War of 1812. Wilson (1766-1854) stamped the barrels with "U.S." for United States, but soldiers began referring to the grub as "Uncle Sam's." The local newspaper picked up on the story, and Uncle Sam eventually gained widespread acceptance as the nickname for the federal government.

Source: *The History Channel*, www.history.com/this-day-in-history/united-states-nicknamed-uncle-sam

While a bull elk's antlers are growing, they are covered with a thin, fuzzy skin called velvet. Blood flows through the antlers, helping them grow as much as one inch per day. This blood flow also acts as "air-conditioning," cooling the large male through the heat of the summer.

Source: *The Jungle Store*, www.thejunglestore.com/

Food product dating

“Sell by Feb 14” is a type of information you might find on a meat or poultry product. Are dates required on food products? Does it mean the product will be unsafe to use after that date? Here is some background information which answers these and other questions about product dating.

“Open Dating” (use of a calendar date as opposed to a code) on a food product is a date stamped on a product’s package to help the store determine how long to display the product for sale. It can also help the purchaser to know the time limit to purchase or use the product at its best quality. It is not a safety date. After the date passes, while not of best quality, the product should still be safe if handled properly and kept at 40 °F or below. If product has a “use-by” date, follow that date. If product has a “sell-by” date or no date, cook or freeze the product.

Except for infant formula, product dating is not generally required by Federal regulations. However, if a calendar date is used, it must express both the month and day of the month (and the year, in the case of shelf-stable and frozen products). If a calendar date is shown, immediately adjacent to the date must be a phrase explaining the meaning of that date such as “sell-by” or “use before.”

There is no uniform or universally accepted system used for food dating in the United States. Although dating of some foods is required by more than 20 states, there are areas of the country where much of the food supply has some type of open date and other areas where almost no food is dated.

Open dating is found primarily on perishable foods such as meat, poultry, eggs and dairy products. “Closed” or “coded” dating might appear on shelf-stable products such as cans and boxes of food.

Types of Dates

- A “Sell-By” date tells the store how long to display the product for sale. You should buy the product before the date expires.
- A “Best if Used By (or Before)” date is recommended for best flavor or quality. It is not a purchase or safety date.
- A “Use-By” date is the last date recommended for the use of the product while at peak quality. The date has been determined by the manufacturer of the product.
- “Closed or coded dates” are packing numbers for use by the manufacturer.



Except for “use-by” dates, product dates don’t always refer to home storage and use after purchase. “Use-by” dates usually refer to best quality and are not safety dates. But even if the date expires during home storage, a product should be safe, wholesome and of good quality if handled properly and kept at 40 °F or below. If product has a “use-by” date, follow that date. If product has a “sell-by” date or no date, cook or freeze the product.

Foods can develop an off odor, flavor or appearance due to spoilage bacteria. If a food has developed such characteristics, you should not use it for quality reasons.

If foods are mishandled, however, foodborne bacteria can grow and cause foodborne illness — before or after the date on the package. For example, if hot dogs are taken to a picnic and left out several hours, they might not be safe if used thereafter, even if the date hasn’t expired.

Other examples of potential mishandling are products that have been: defrosted at room temperature more than two hours; cross contaminated; or handled by people who don’t practice sanitation. Make sure to follow the handling and preparation instructions on the label to ensure top quality and safety.

Find storage, cooking or freeze recommended time charts at the web address provided below, or contact the North Dakota Meat and Poultry Inspection Program at (701) 328-2231, (701) 204-3248 or (800) 242-7535. Mention this article and publish date for a mail copy.

Material for this article taken from the USDA Food Safety Inspection Service website: www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/food-product-dating/food-product-dating

More information is available by searching www.fsis.usda.gov, food safety fact sheets, or contact the North Dakota Department of Agriculture at 701-204-3248 to request a print copy.

Advances in slicing for bone-in pork and beef

Earlier this year the National Pork Board and Beef Checkoff Program received unanimous approval from the Industry-Wide Cooperative Meat Identification Standards Committee (ICMISC) to introduce updated Uniform Retail Meat Identification Standards (URMIS) nomenclature for fresh beef and pork for retailers to use on packaging.

The pork loin, for instance, has been a very undervalued and underutilized cut industrywide – but by working with a whole, bone-in pork loin and cutting it into a succession of chops from the blade end to the sirloin end, processors should be able to add value.

Same cuts, new name

There is still value to be found in the loin and belly of the pig, with the potential to increase value, offer innovative cuts to the foodservice industry, and lead culinary trends.

Under the new naming conventions, the loin chop is now the porterhouse chop; the name of the rib chop center has been shortened to the more recognizable T-bone chop; and the rib chop has been jazzed up as the new rib eye chop.

It's another way for processors to extract greater value from underutilized (and lower-priced) cuts of beef and pork while menuing the cuts at a higher price point and margin.

Tenderizing the carcass

Tenderness is the meat trait most associated with overall palatability, especially for whole muscle cuts such as steaks and chops. Despite the change in pork nomenclature to reflect similarities with beef cuts, it still may be necessary to tenderize some of the tougher cuts – particularly on the beef carcass.

One of the methods to manipulate muscles of hot carcasses to improve tenderness includes cutting through the bones of hot carcasses at key points to allow the weight of the carcass to stretch the muscle fibers.

As soon as possible after slaughter, cuts are made in the skeleton of the carcass, although processors must maintain suspension of the Achilles tendon. The weight of the carcass below the cut points helps to stretch many of the major loin and round muscles.

Bones in the skeleton, connective tissue, adipose tissue



and some minor muscles are severed in two selected positions of beef carcass sides; one cut is placed between the 12th and 13th thoracic vertebrae, at or near the normal position for separating the fore- and hindquarter of the side. The other cut is positioned in the junction between the sirloin and the round, cutting through the pelvic bone, the junction between the 4th and the 5th sacral vertebrae and adjacent connective tissue.

Cutting through bones of hot beef carcasses has been shown to improve the tenderness of the knuckle, strip loin, ribeye and sirloin. In a study of tendercut on pork carcass sides, the longissimus muscles had higher sarcomere lengths and became more tender than muscles from untreated sides.

Safety considerations

Because slicers are so complex mechanically, they are inherently difficult to clean. In addition to routine sanitation, some companies go as far as to “cook” their slicers by placing tarps over the equipment and running steam underneath to raise the temperature of the equipment high enough to kill pathogens such as *Listeria*.

All such systems use varying types of blades and knives; therefore sharpening and proper maintenance of the blades is critical to high yields and efficient cuts. Once dull, the blades cannot cut but instead will begin to rip or tear product and increase “mis-cuts.”

Both the volume and type of product will dictate the frequency of blade changes, but it is recommended that some blades be changed after approximately four hours of continuous cutting.

<http://www.meatingplace.com/Industry/TechnicalArticles/Details/38006>

Submitted information

USDA reports 4% decline in red meat production

Production Numbers for Red Meat in USA

Species of Animal	Pounds of production Aug, 2013	Production change from Aug, 2012	Average live weight Aug, 2013	Difference in average live weight from Aug, 2012	Number of Head slaughtered Aug, 2013	Change in Slaughter numbers from Aug, 2012
Cattle	2.24 billion lbs	5% decrease	1310 lbs	10 lb increase	2.82 million	6% decrease
Veal	9.1 million lbs	11% decrease	240 lbs	3 lb increase	64,500	11% decrease
Pork	1.94 billion lbs	3% decrease	271 lbs	2 lb increase	9.56 million	4% decrease
Lamb Mutton	13.8 million lbs	3% decrease	133 lbs	12 lb decrease	208,100	4% increase
Red Meat Production August, 2013 4.20 billion lbs		Red Meat Production August, 2012 4.39 billion lbs		Decrease in Red Meat Production 4% decrease		
Total Red Meat Production		January to August 2013 32.5 billion pounds				

USDA National Agricultural Statistics Service Report, Released September 19, 2013.

<http://www.usda.gov/nass/PUBS/TODAYRPT/lstk0913.pdf>

New system identifies 193 different, illness-causing yeasts and bacteria

The U.S. Food and Drug Administration now allows marketing in the U.S. of the first mass spectrometer system for automated identification of bacteria and yeasts known to cause serious illness in humans.

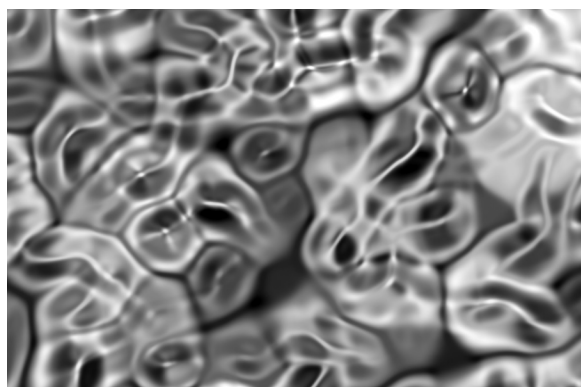
See bioMerieux's news release at:

www.biomerieux-usa.com/servlet/srt/bio/usa/dynPage?open=USA_NWS_NWS&doc=USA_NWS_NWS_G_PRS_RLS_182&crptprm=ZmlsdGVyPQ==

The VITEK MS, manufactured by French-based bioMerieux, can identify 193 different microorganisms and can perform up to 192 different tests in a single automated series of testing, with each test taking about one minute.

Source: FDA news release issued Aug. 21, 2013

For more information: www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm365907.htm?source=govdelivery&utm_medium=email&utm_source=govdelivery



Different forage affects beef cattle weight, taste

By Micheal Fielding,
Managing Editor, *Meatingplace*

The forage that beef cattle eat affects the nutrition and tastiness of the meat, according to Clemson University animal science researchers who are reporting that steers grazing on one of five forages kept in paddocks showed significant differences in growth, carcass and meat quality.

The research may help cattle producers with alternatives to corn and feed when they are looking to add weight and value to their animals prior to sale.

The team conducted a two-year experiment feeding Angus steers enclosed in five-acre lots planted with alfalfa, bermuda grass, chicory, cowpea or pearl millet. They reported their findings in the *Journal of the American Society of Animal Science*.

“Finishing steers on alfalfa and chicory during summer increased steer performance,” they wrote in the journal article. The report also stated that finishing on legumes (alfalfa and cowpea) increased carcass quality, and in

taste tests consumers preferred the flavor of the meat. Finishing on bermuda grass and pearl millet improved the levels of healthy fatty acids that may reduce cancer risks.

The coauthors of the study are John Andrae, Susan Duckett and Steve Ellis, and Maggie Miller and Jason Schmidt, who were graduate students working on the research.

“The study is useful to beef producers in the Southeast, where summer heat is a challenge for finishing cattle” said Andrae, a forage and pasture specialist. “These forages have potential to boost steer growth and quality when traditional cool-season forages are either dormant or have slow growth rates and don’t do as good a job finishing cattle for market.”

A USDA Southern Region Sustainable Agriculture Research and Education grant contributed funding for the study.

<http://www.meatingplace.com/Industry/News/Details/44865>

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type of meat or other product is involved. USDA has determined ground beef to be a riskier meat product because any bacteria on the surface of one or more pieces of meat will be distributed throughout the batch during grinding. Because lead is a soft metal, it can be ground along with venison, spreading lead contamination through an entire batch. If lead still remains in venison to be ground, the sooner it is found and removed, the less meat will be contaminated. Pull and examine the grinder plate lead buildup and then rinse it with hot water to reduce lead contamination. If there is evidence of large amounts of lead contamination on the grinder plate, you may need to discard the venison that was ground since the previous time the grinder plate was cleaned. To minimize the amount of product that could be potentially discarded, check the grinder

at least once per hour, or between each batch.

5. Avoid or minimize batching of multiple deer to avoid cross-contamination. It takes only one lead-contaminated carcass to contaminate several others during grinding. While it may not be possible to process deer singly, smaller batch sizes will limit potential cross contamination.

6. Develop Standard Operating Procedures (SOPs) for all employees to follow. The SOPs should address limiting lead contamination by trimming, inspecting venison going into the grinder, and periodic checking and cleaning grinder plates and knives. A written SOP will ensure that employees understand and use practices to limit lead in ground venison and deer sausage.

7. Post information or otherwise inform customers about steps being taken to limit lead contamination. This may also be important in explaining the yield or amount of meat being returned to the customer if excessive trimming is required to limit possible lead contamination.

Additional Information:

North Dakota Department of Health
Phone Number: (701) 328-2372
www.ndhealth.gov/lead/venison

North Dakota Game and Fish
Phone Number: (701) 328-6300
<http://gf.nd.gov/>

North Dakota State University
Phone Number: (701) 231-8975
<http://www.ag.ndsu.edu/publications>

Classified ads

We are always looking for industry related items to advertise in the Meat Messenger. We post sale and want ads **FREE**. If you would like to put something in the Meat Messenger classifieds contact Julie Nilges at 701-204-3248 or e-mail description with contact information to jnilges@nd.gov.

Dean's Meat Market, Dickinson, ND: Turnkey business. Well established, custom-exempt processing with retail meats, cheeses and 30 different homemade sausages, recipes included. Large, fresh, retail meats counter and retail freezers. Includes all the working equipment, mostly stainless steel. Also includes walk-in coolers and freezer. Building not included but possibly negotiable. For more information, call Dean Evenson at 701-483-8461 and see the website at www.deansmeatmarket.com.

Berkel Commercial Automatic Meat Slicer: Newly reconditioned. For price or more information contact Larry Brenno at 701-996-2733. Located in Sheyenne.

Sipromac one truck smokehouse: Smokehouse has a Juno microprocessor and liquid smoke attachment. Included are two trucks and many sticks and screens. \$20,000, Please contact Calvin or Alex for more information at 701-743-4451. Located in Parshall.

True Brand cooler: Cooler has two sliding doors and was manufactured in 2001. \$1,000, Please contact Calvin or Alex for more information at 701-743-4451. Located in Parshall.

One-quart plastic containers with lids: Containers and lids are brand new, never been used. \$20 per lot of 50, Please contact Calvin or Alex for more information at 701-743-4451. Located in Parshall.

Prairie Packing Inc.: Slaughter and processing plant in Williston, ND. USDA #7644. 10.43 acres of land with 20,000 sq. ft. building and garage. 15,000 sq. ft. is leased. City sewer and water. Work is divided into 70% rancher/producer and 30% retail sales. 10 employees. Please contact Dave Slais for more information at dslais04@live.com.

Slaughter/processing business: Located near Maddock, ND. Fully operational meat processing facility, all equipment and supplies included. Currently custom-exempt, with option for retail and/or state inspected status, many equipment/facility upgrades last 4 years. Very strong customer base. Please contact Denise for more information at: 701-438-2334.

Walk-in freezer and components: Three phase Copeland compressor Hp p62 Freon, new 2005. Model 4RA3-100A-TSK-800, serial 05A66497R. Single phase Bohn cooling unit model 2402B serial DCD4540. Larkin single phase outside evaporator. Walk-in freezer with shelves/baskets, sharp freeze shelves & cooling unit, has 4-glass doors, free standing unit, walls snap together. Please contact Denise for more information at: 701-438-2334. Located in Esmond.

Find us on Facebook

The new Facebook page benefits both consumers and processors with facts about inspection, rules for producers who want to direct market their products, and tips for safely preparing meat and poultry products.

Please check out our new page and feel free to ask a question by signing into Facebook and searching for North Dakota Meat and Poultry Inspection Program.



North Dakota Meat and Poultry Inspection Program

Government Organization
The State Meat Inspection Program was enacted by the 1999 Legislature to increase the opportunities for meat processors and livestock producers in the state of North Dakota.

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